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Ebrahimi

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(54) **SUPPORT SYSTEM FOR A PADDLE BOARD**

USPC 441/74, 79
See application file for complete search history.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 138 days.

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(21) Appl. No.: **13/952,463**

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(22) Filed: **Jul. 26, 2013**

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(65) **Prior Publication Data**

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Related U.S. Application Data

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Primary Examiner — Anthony Wiest

(51) **Int. Cl.**
B63B 35/79 (2006.01)
B63B 35/85 (2006.01)
B63B 43/14 (2006.01)

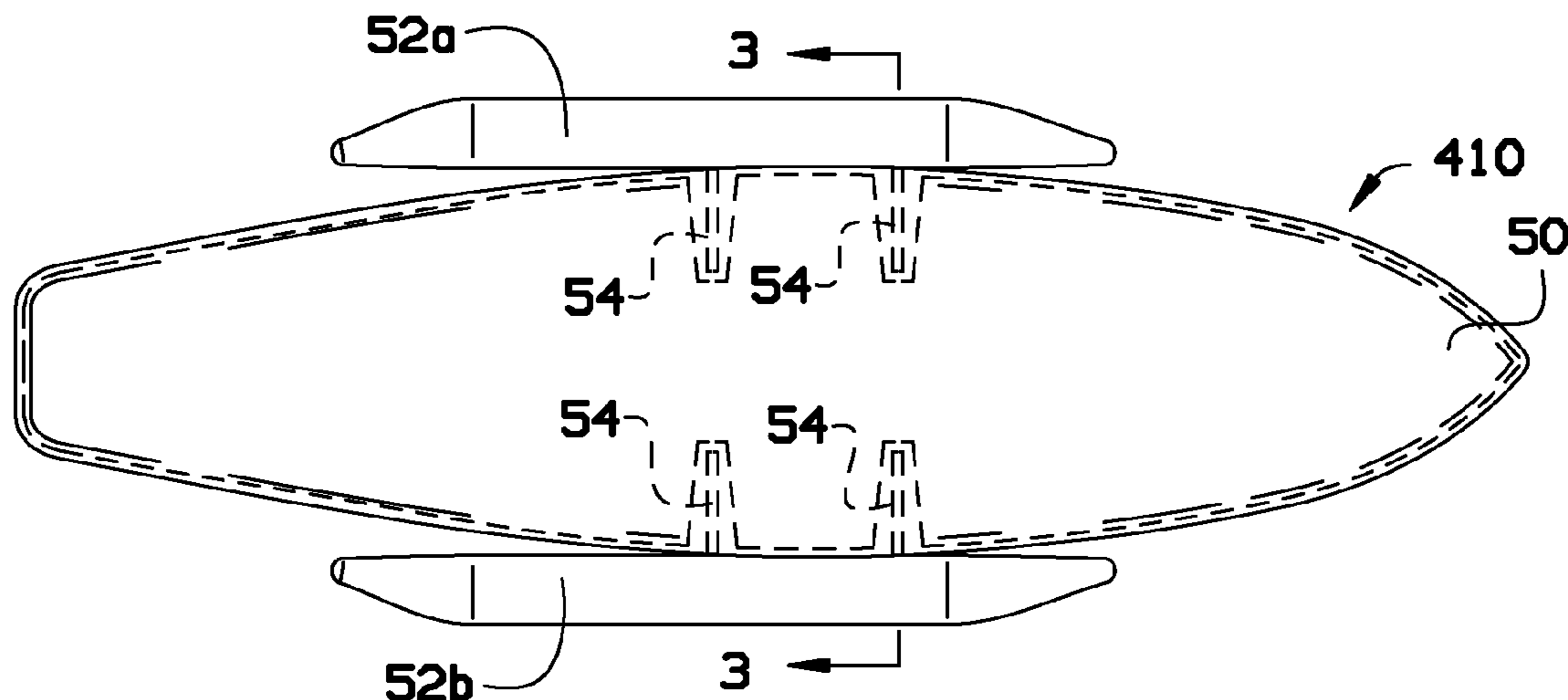
(57) **ABSTRACT**

(52) **U.S. Cl.**
CPC **B63B 35/85** (2013.01); **B63B 35/79** (2013.01); **B63B 35/795** (2013.01); **B63B 43/14** (2013.01)

A support system is configured to increase buoyancy and stability of a paddle board having a central axis running from bow to stern. The support system includes a port side float connected to the paddle board such that the port side float is parallel to the central axis. A starboard side float is connected to the paddle board such that the starboard side float is parallel to the central axis. The port side float and the starboard side float increase lateral stability on the paddle while reducing draft on the paddle board making it safer to float in shallow water.

(58) **Field of Classification Search**
CPC B63B 35/85; B63B 35/795; B63B 43/14; B63B 35/79

2 Claims, 10 Drawing Sheets



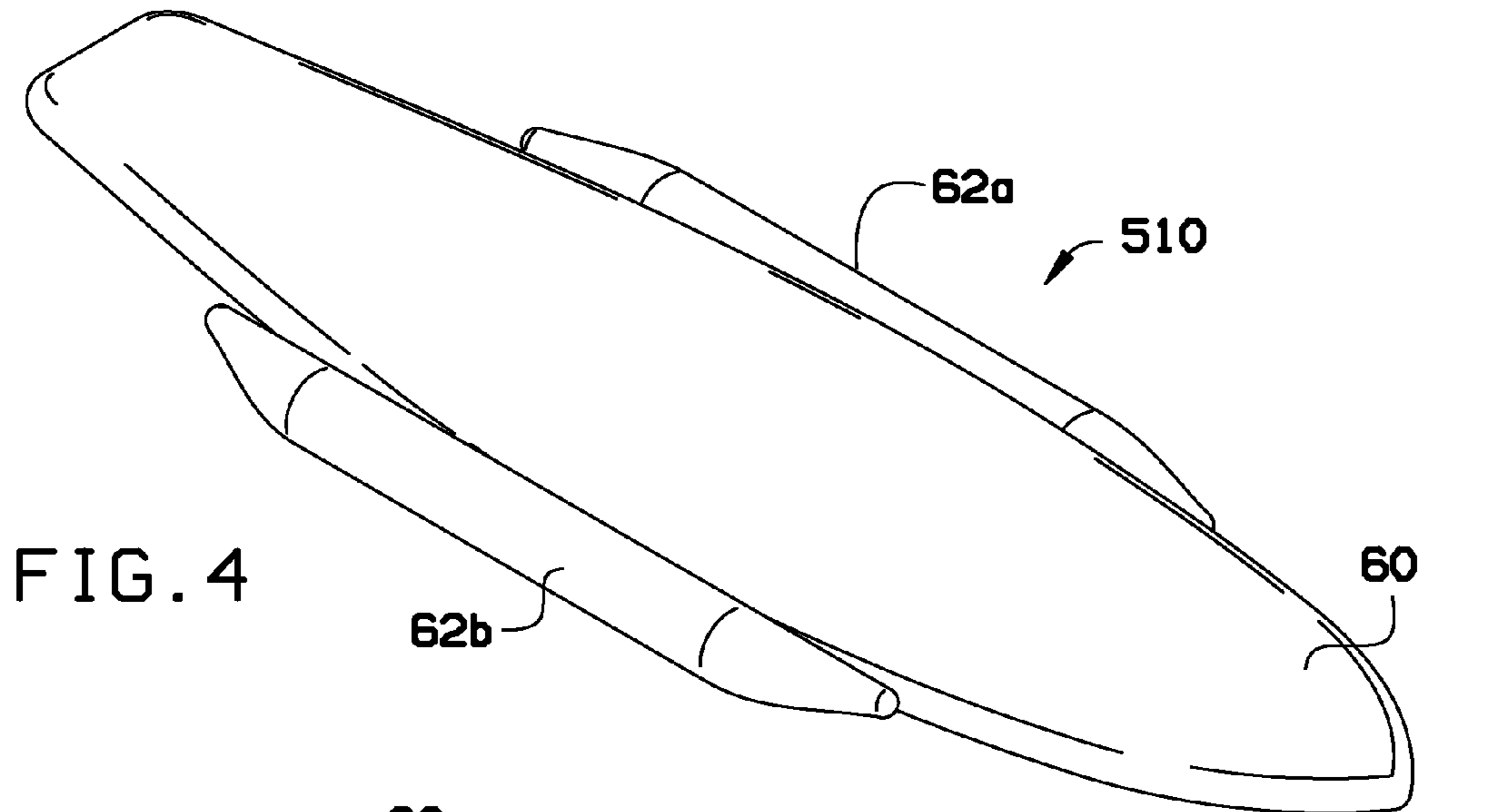


FIG. 4

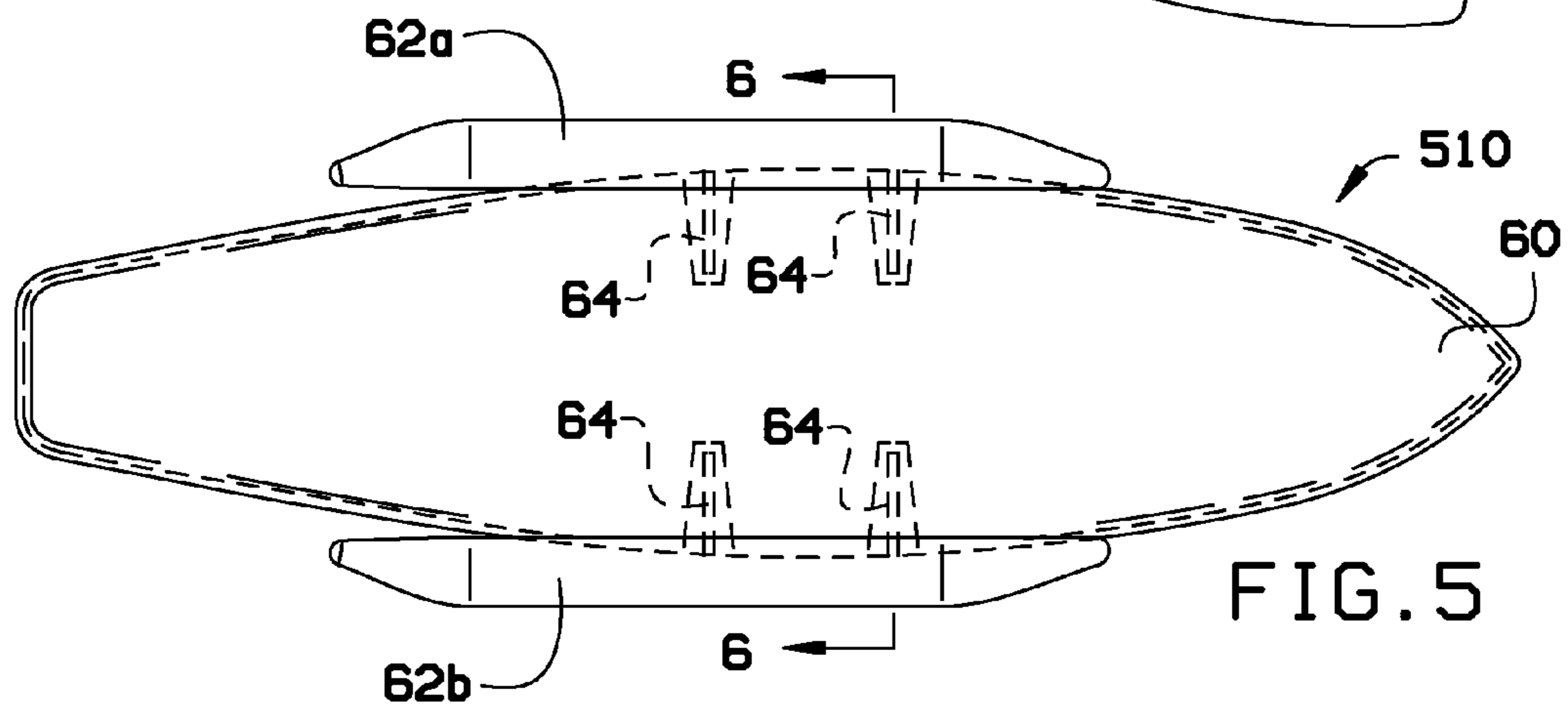


FIG. 5

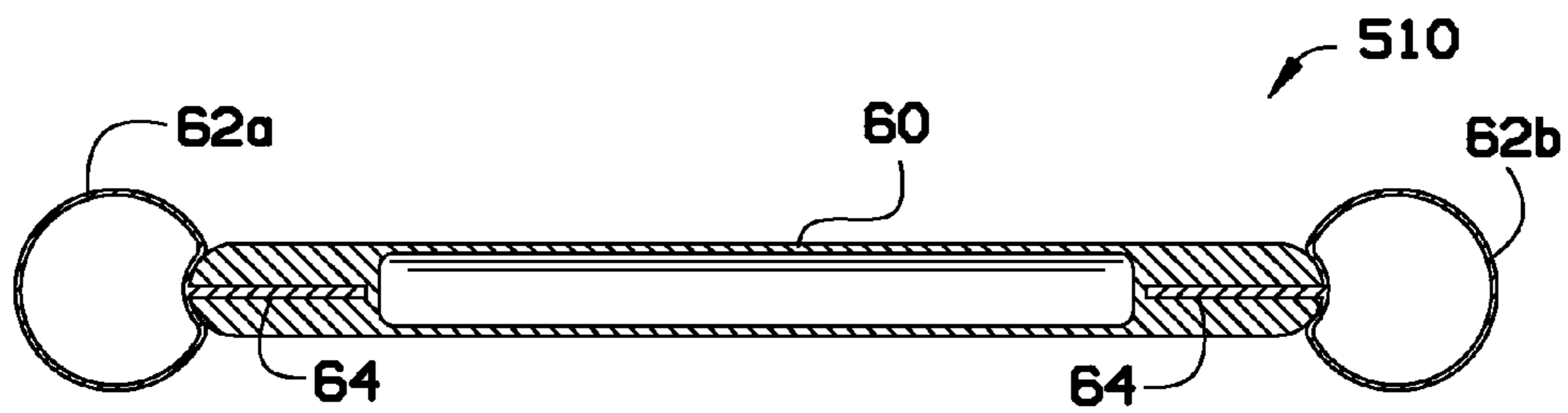
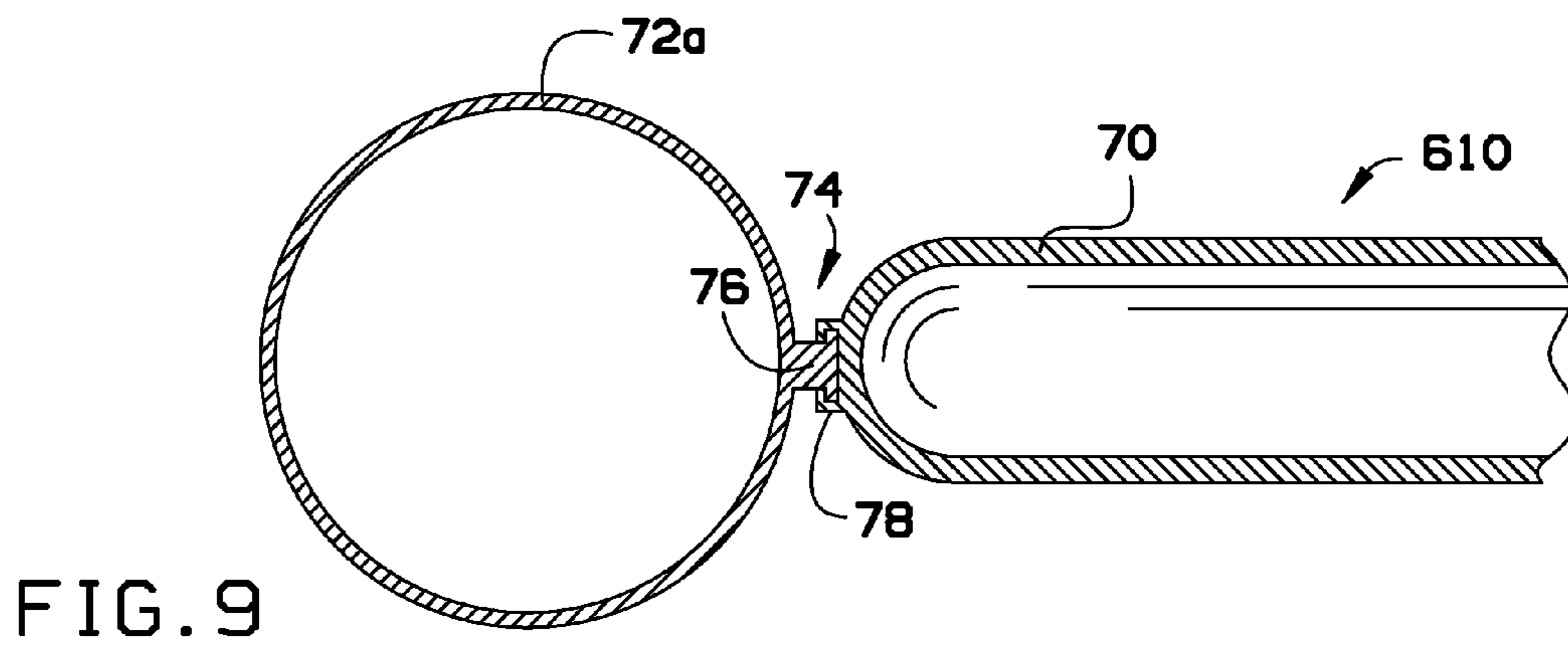
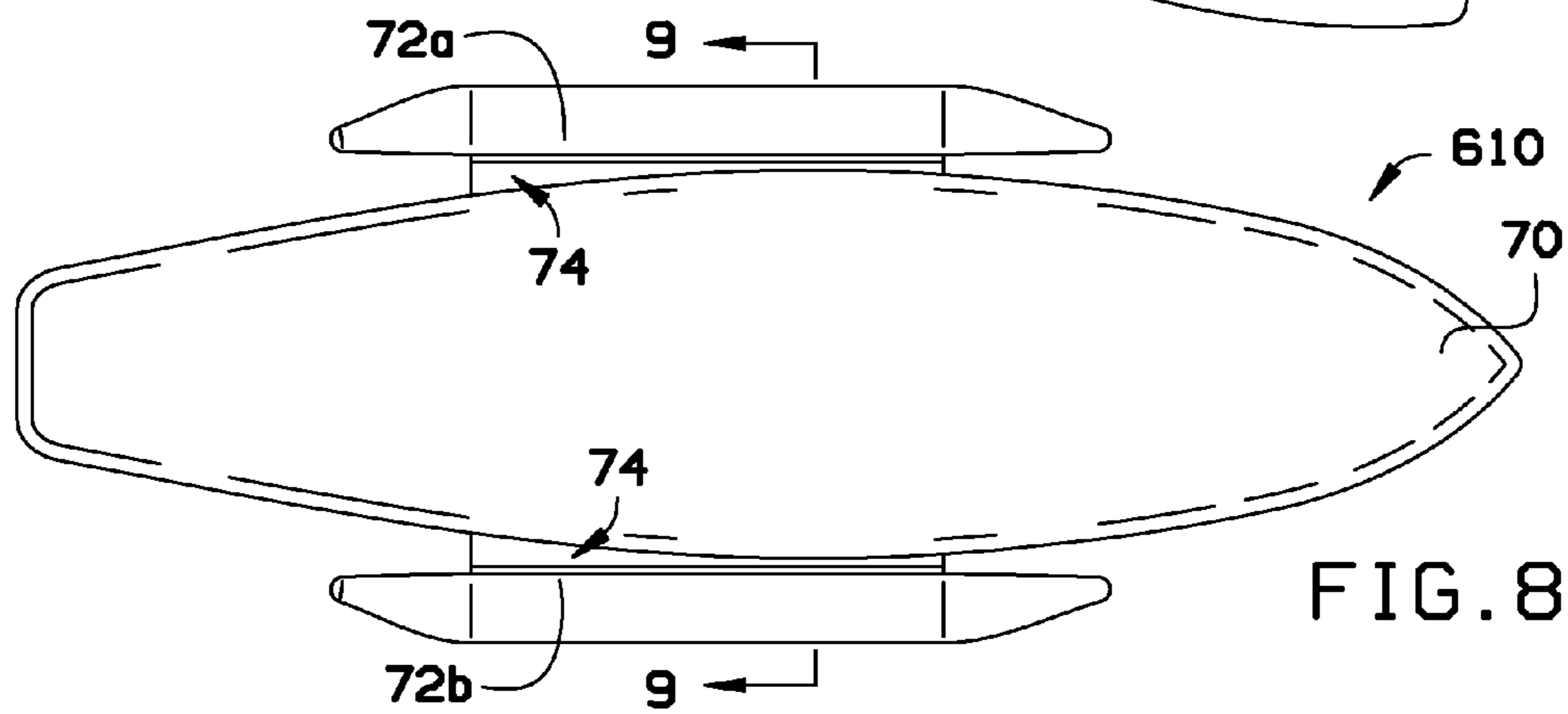
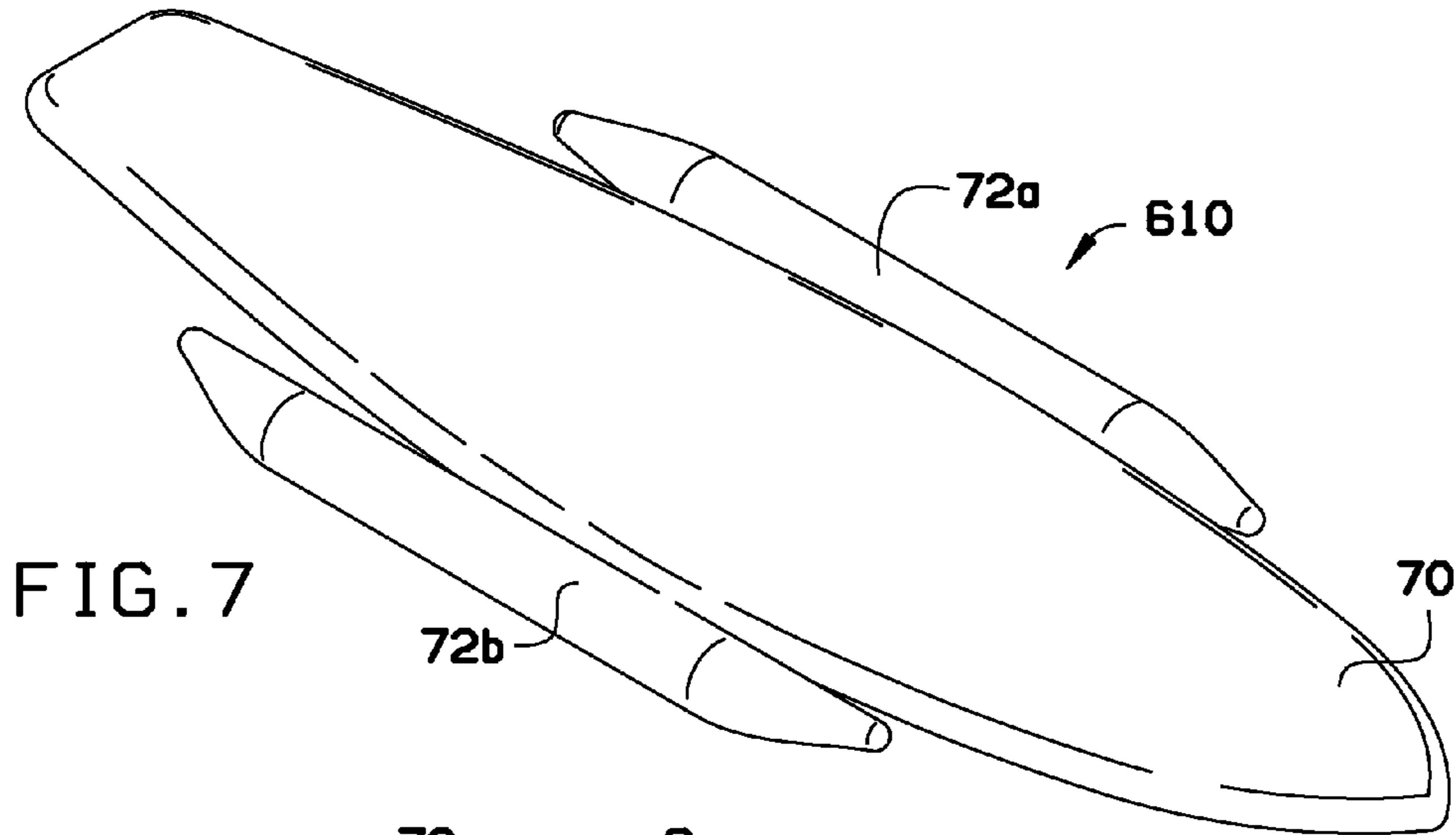


FIG. 6



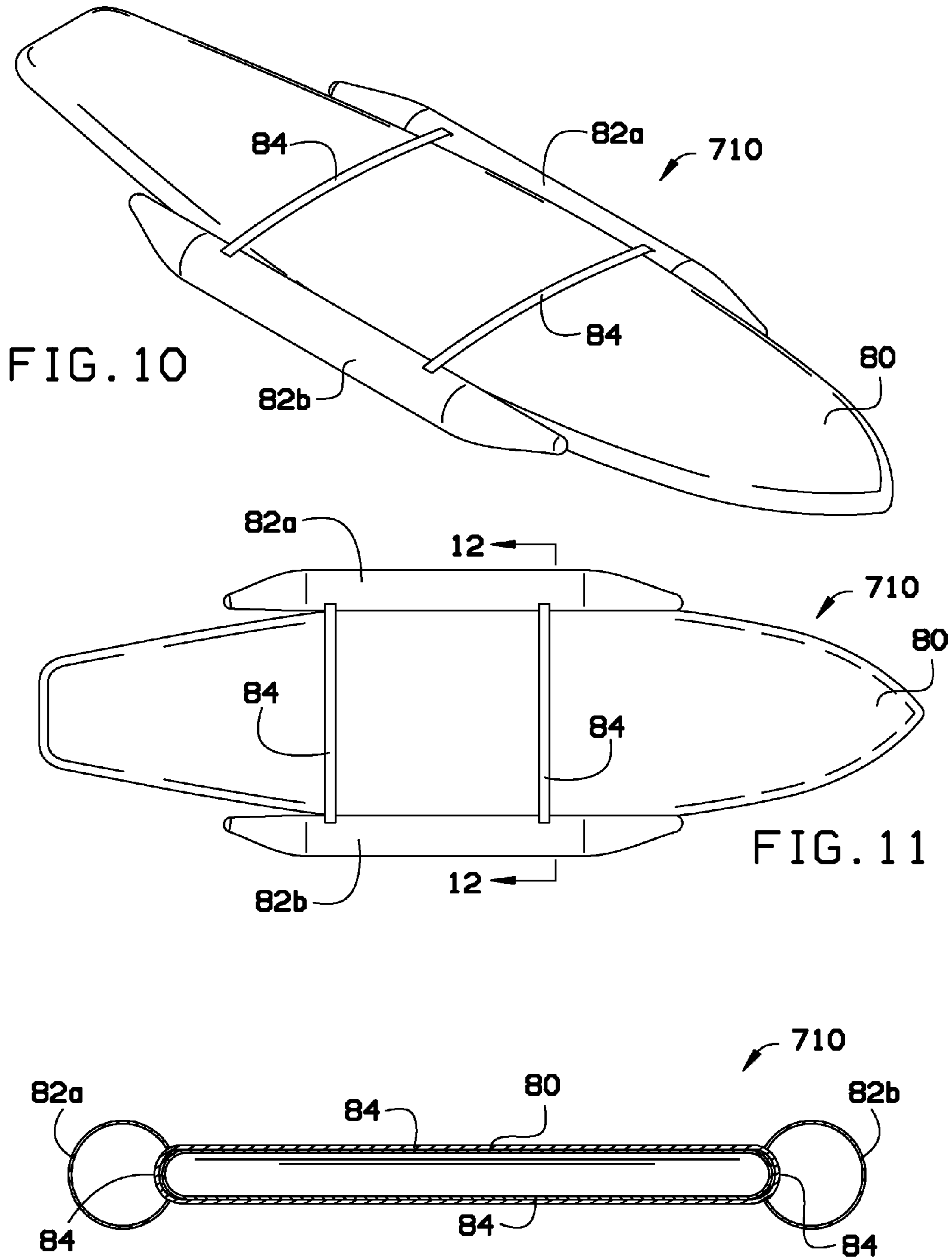


FIG. 12

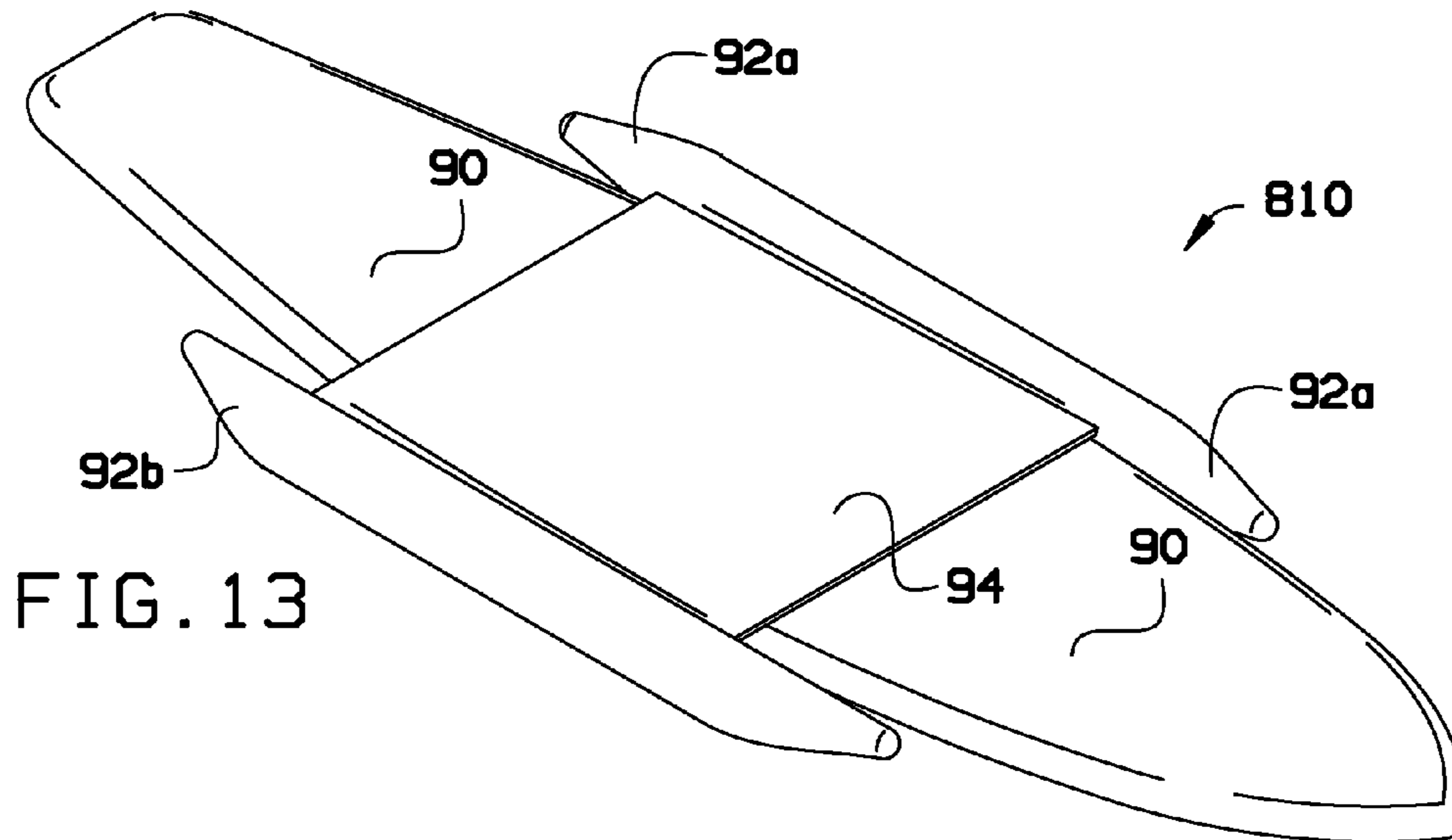


FIG. 13

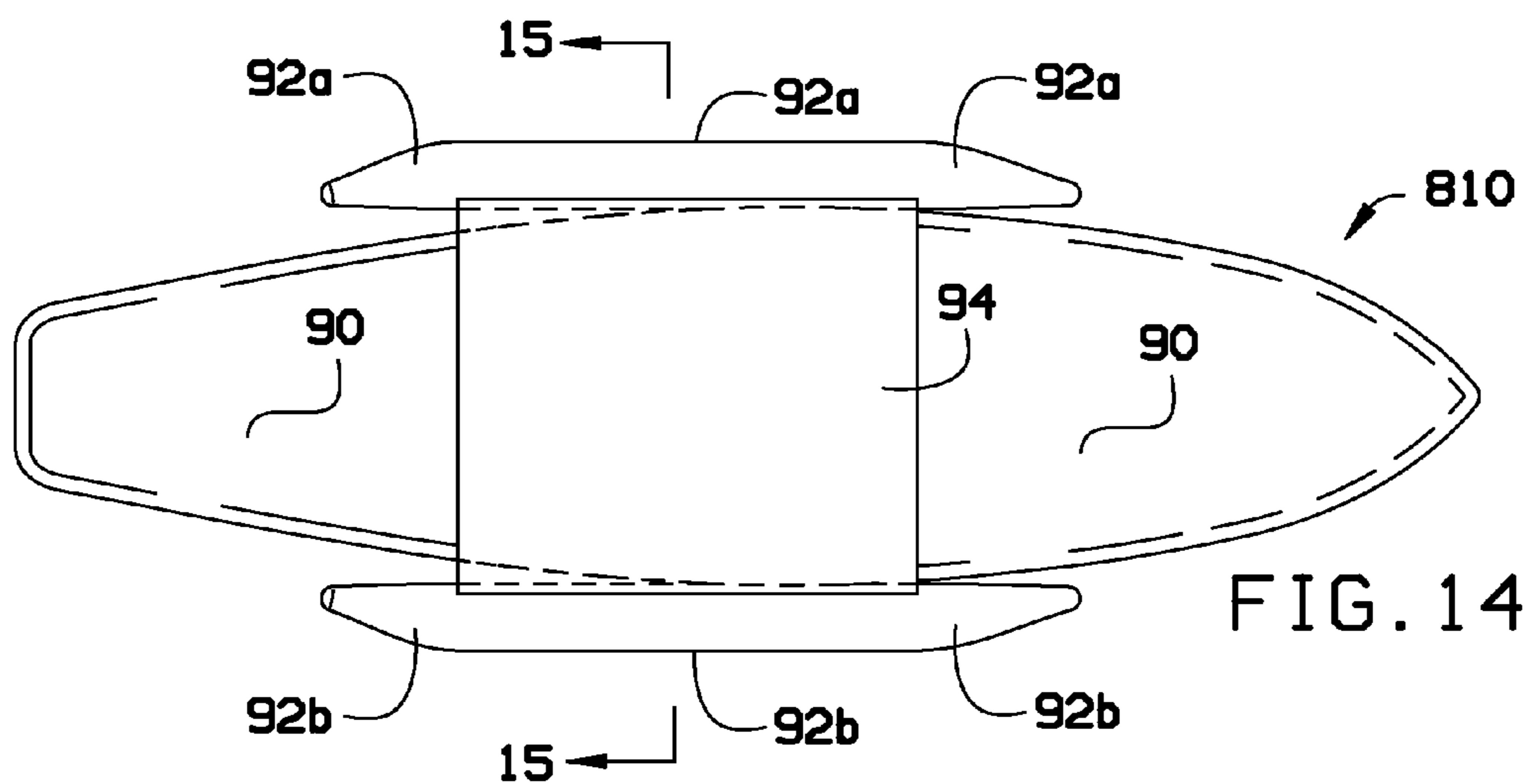


FIG. 14

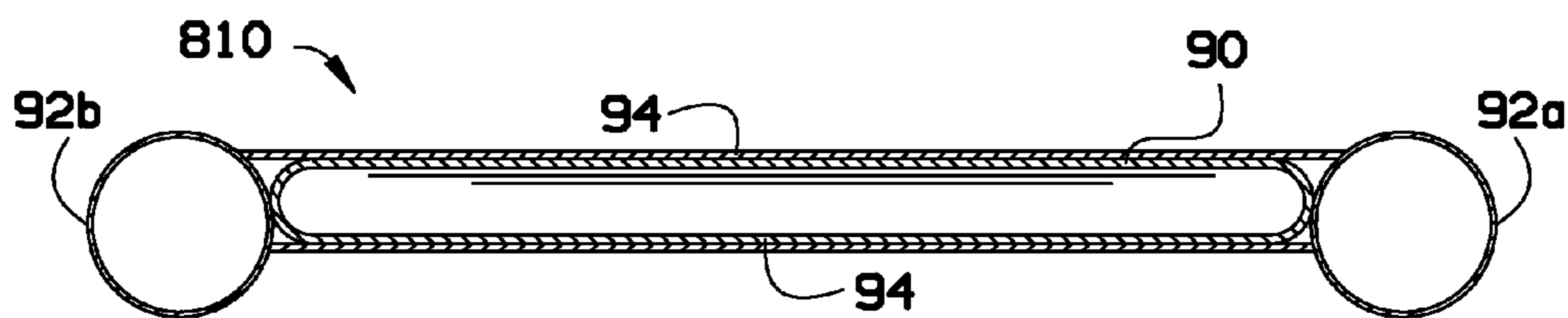


FIG. 15

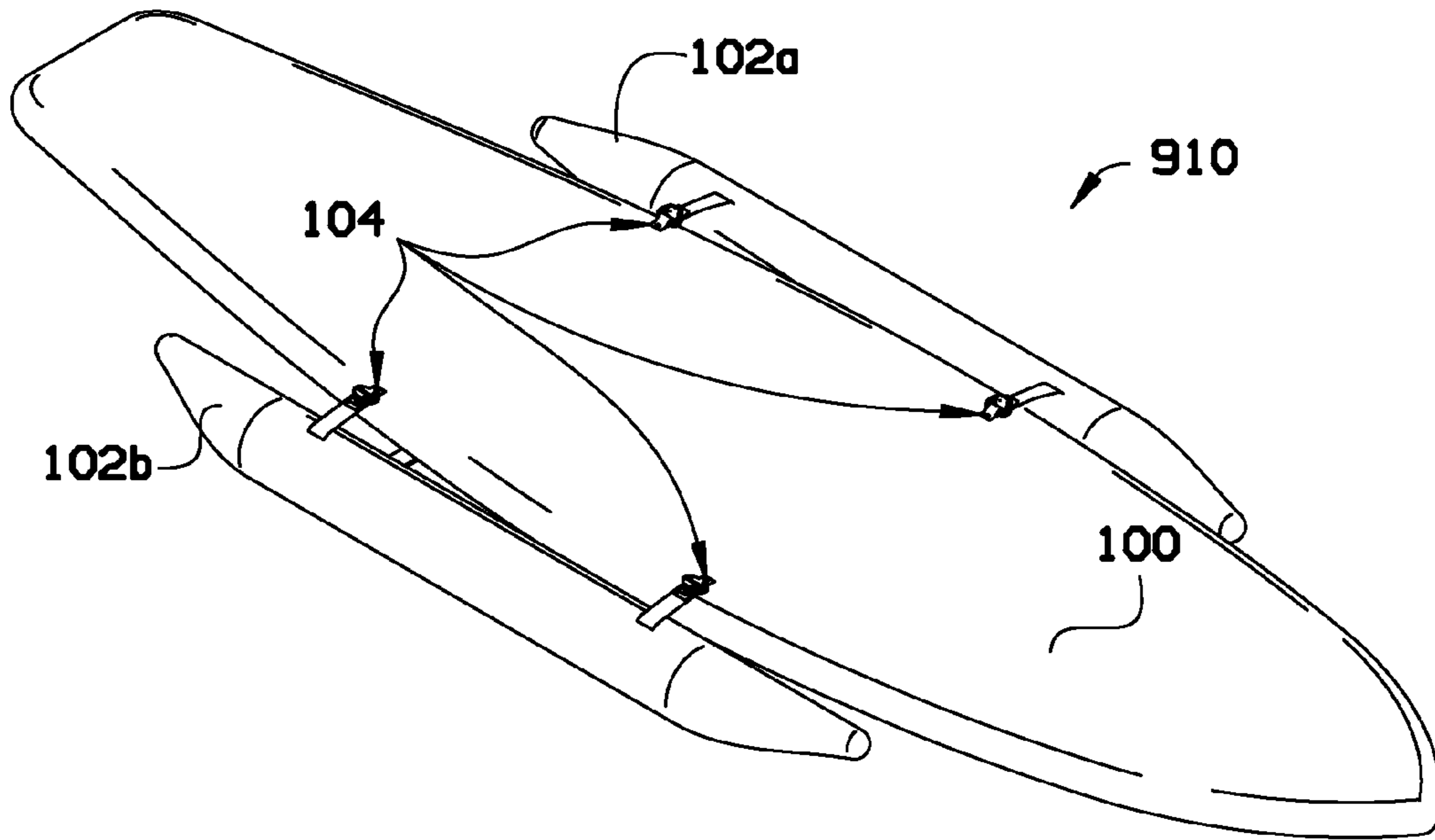


FIG. 16

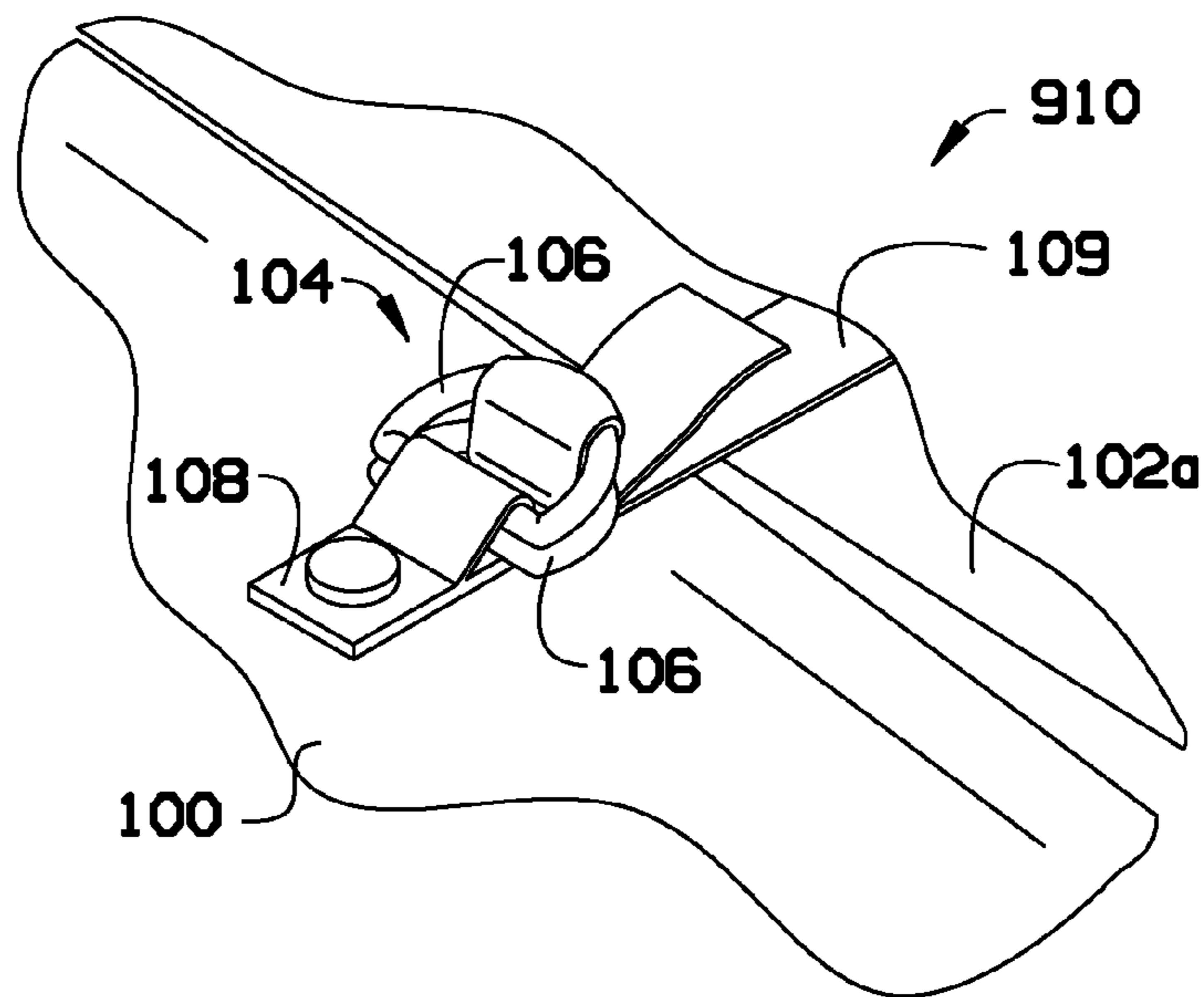


FIG. 17

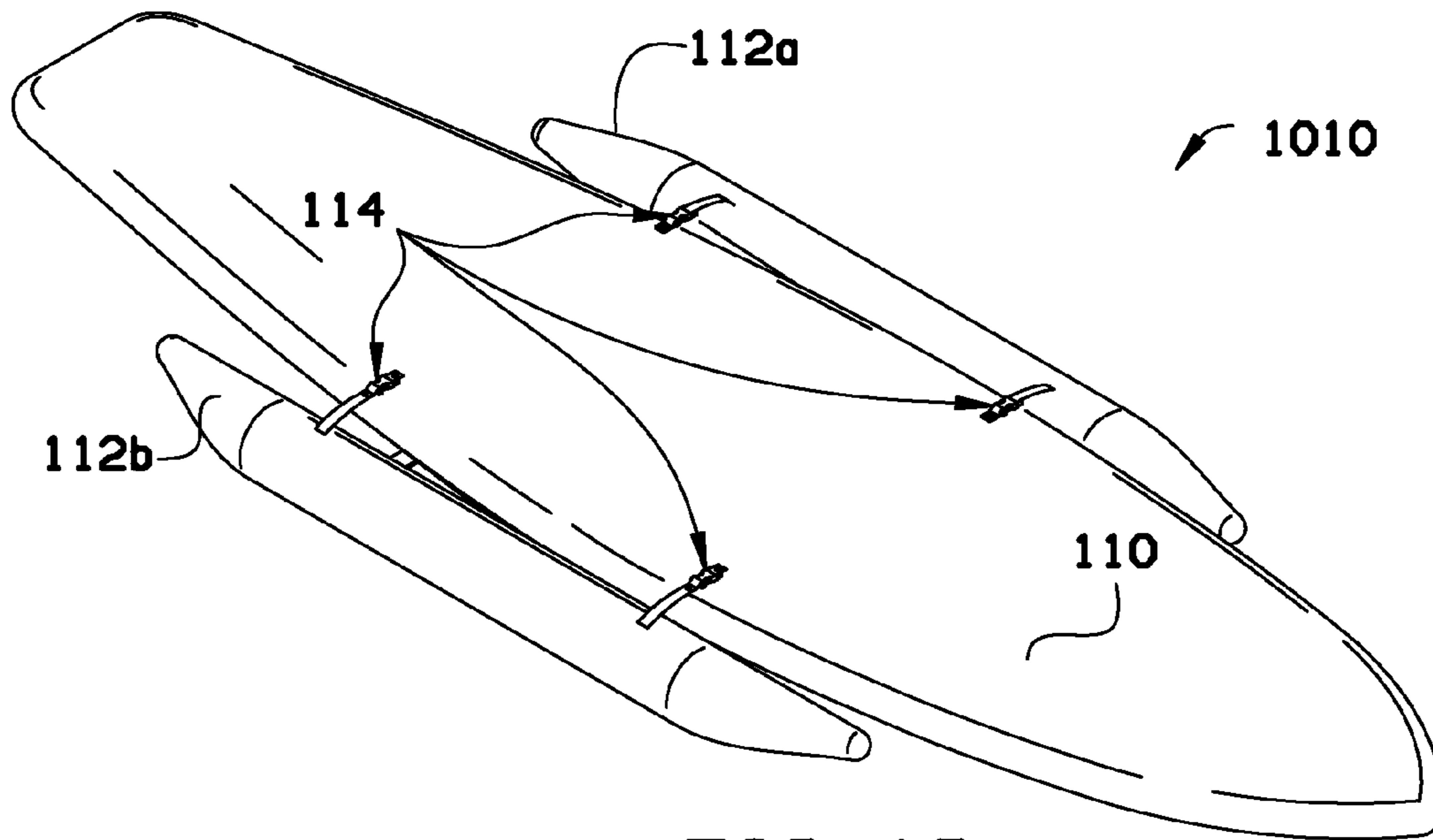


FIG. 18

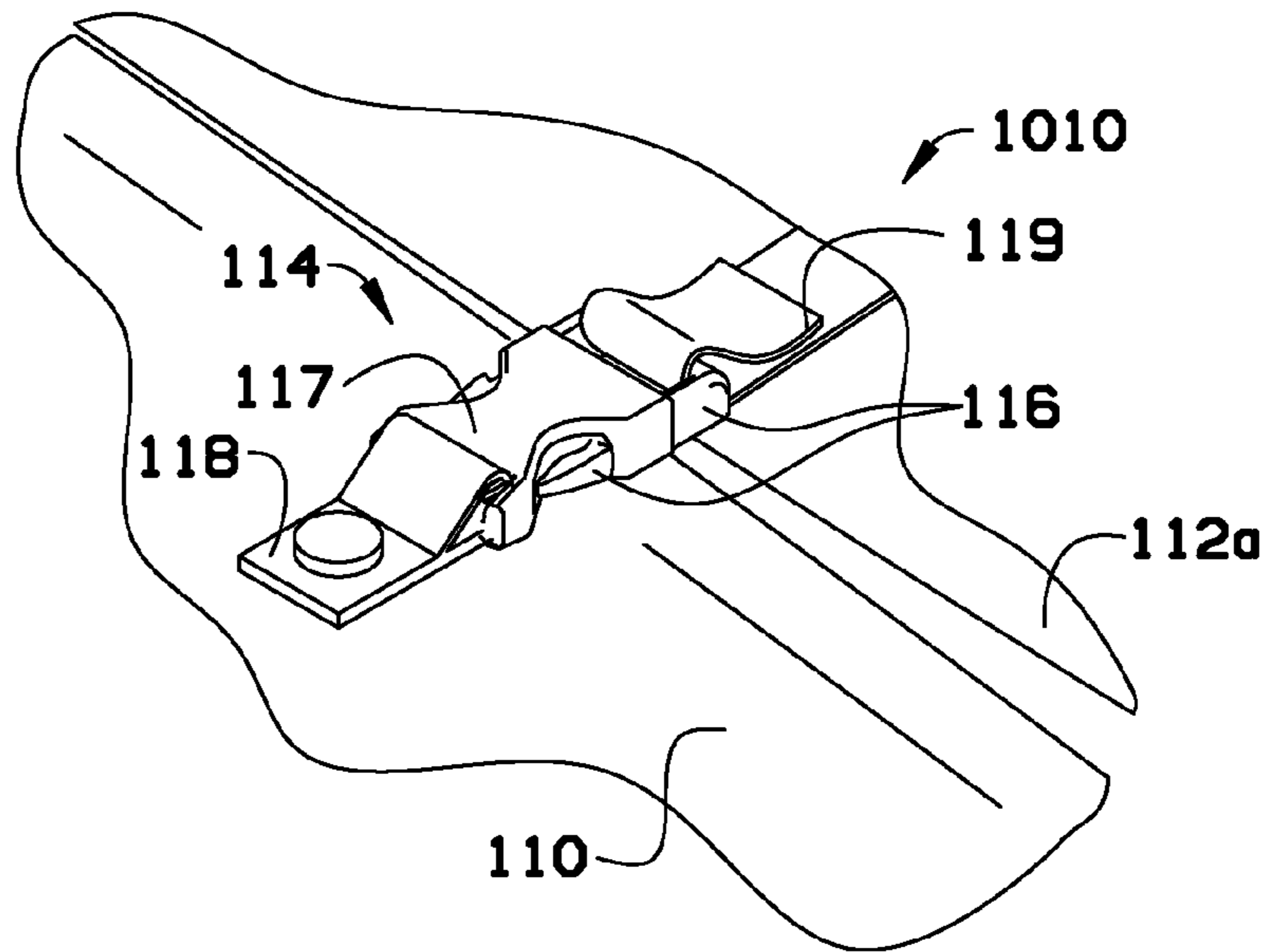


FIG. 19

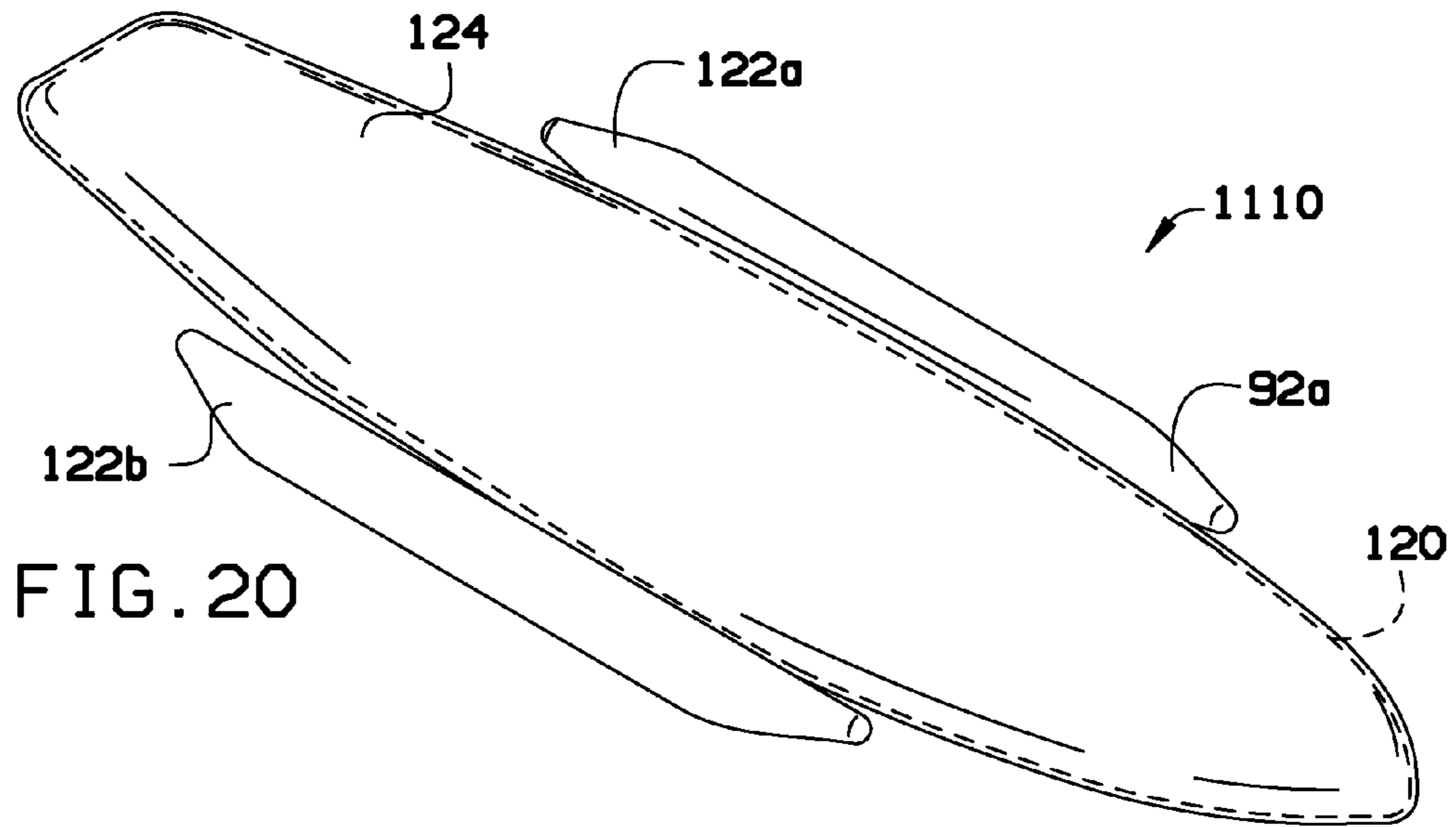


FIG. 20

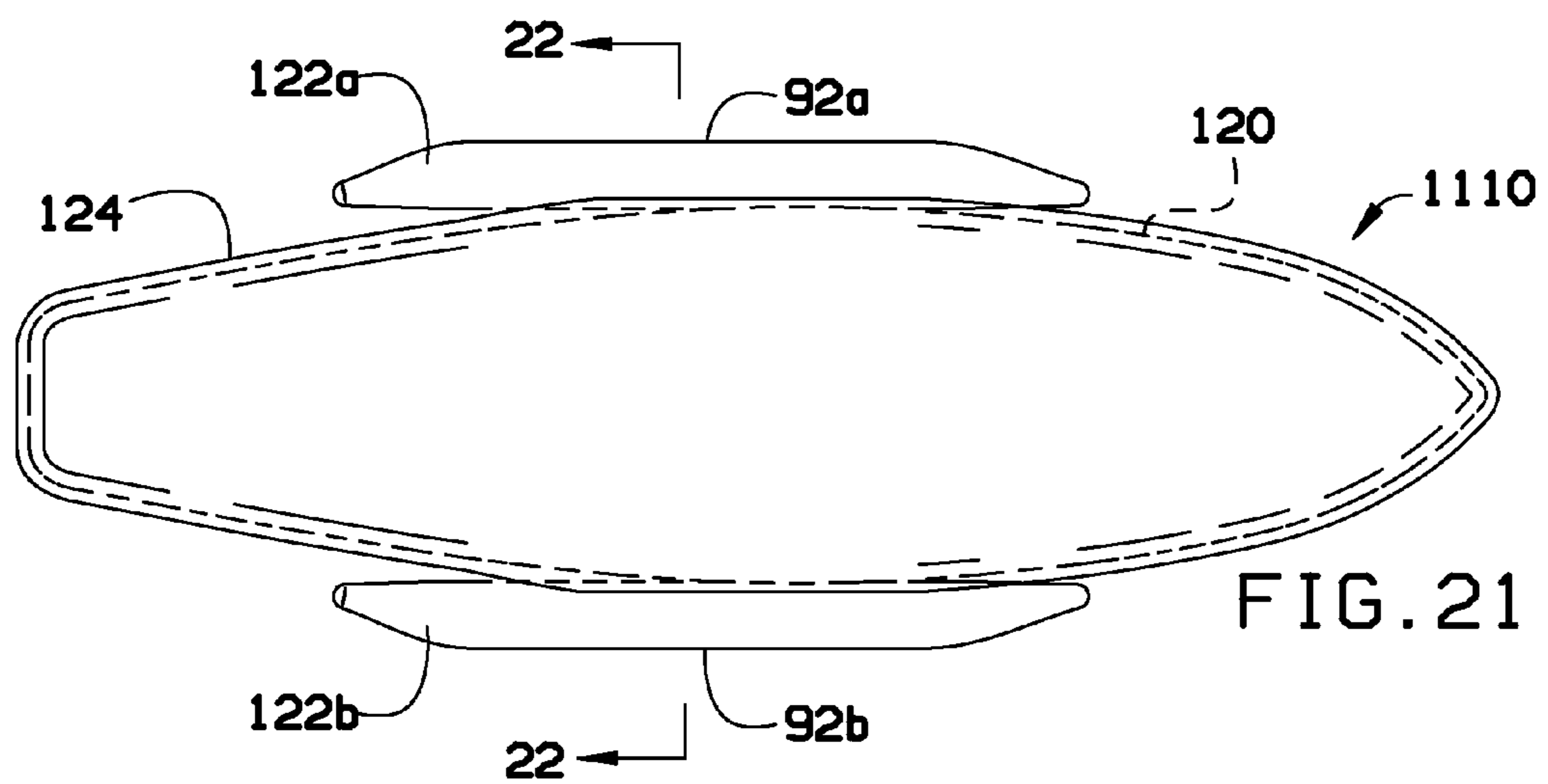


FIG. 21

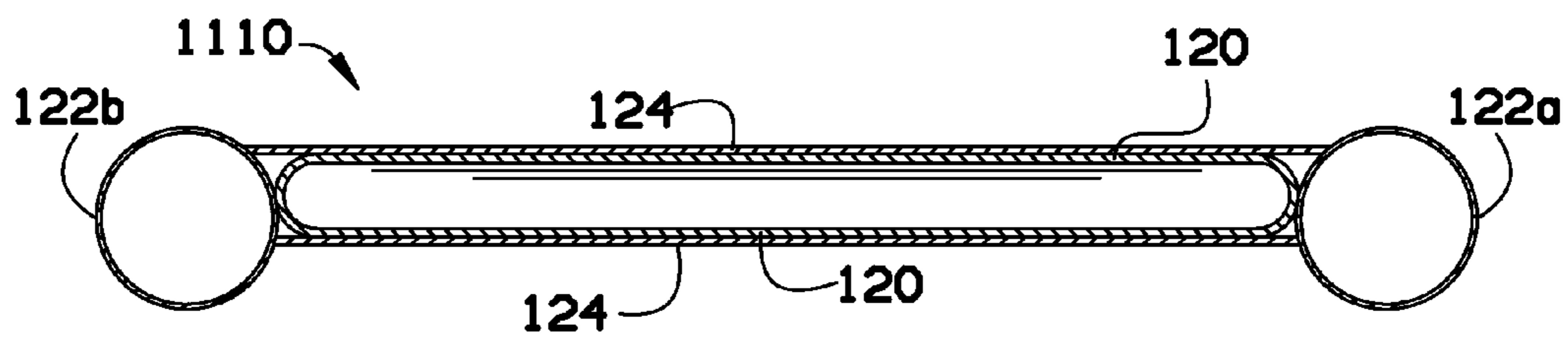


FIG. 22

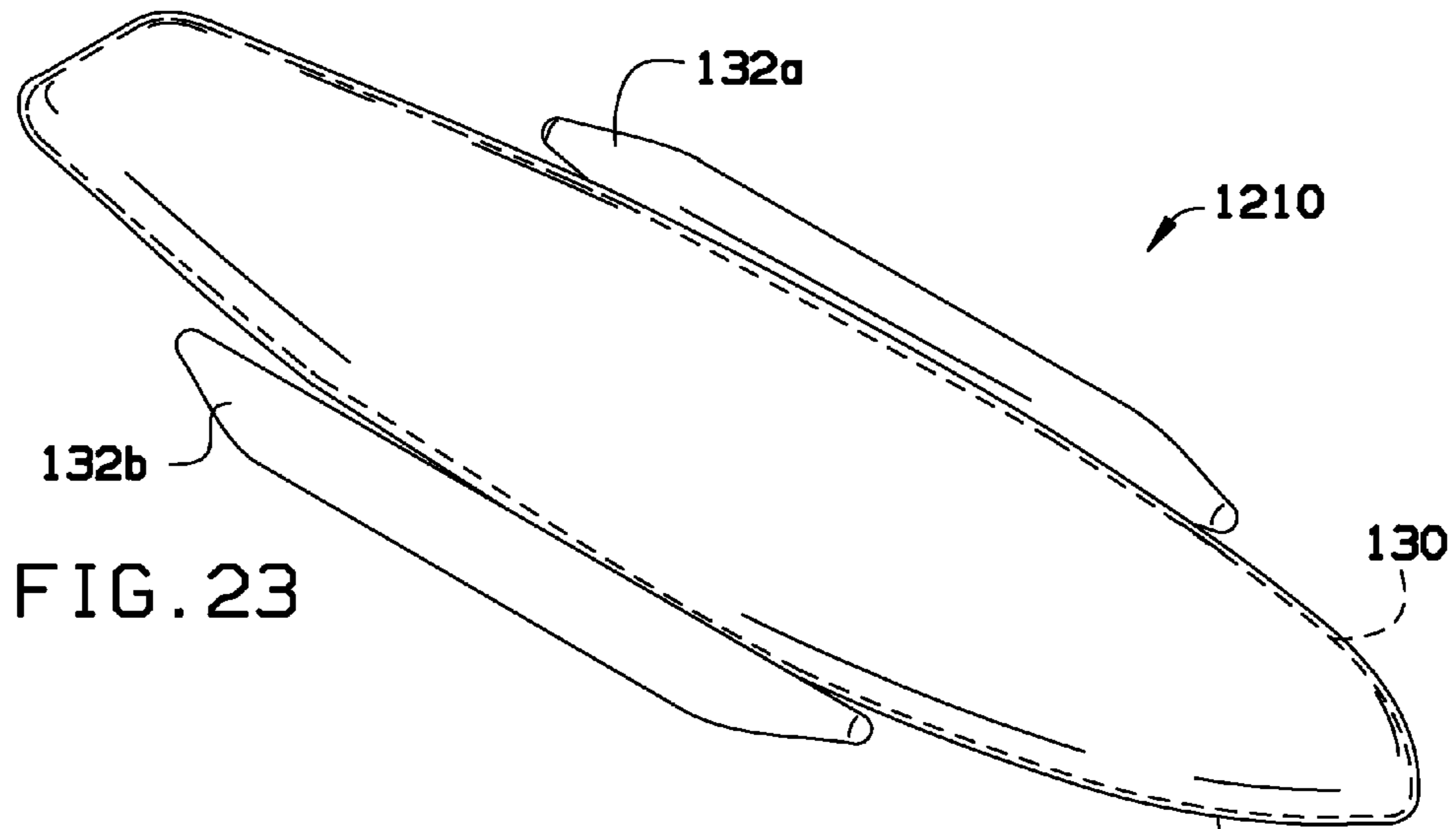


FIG. 23

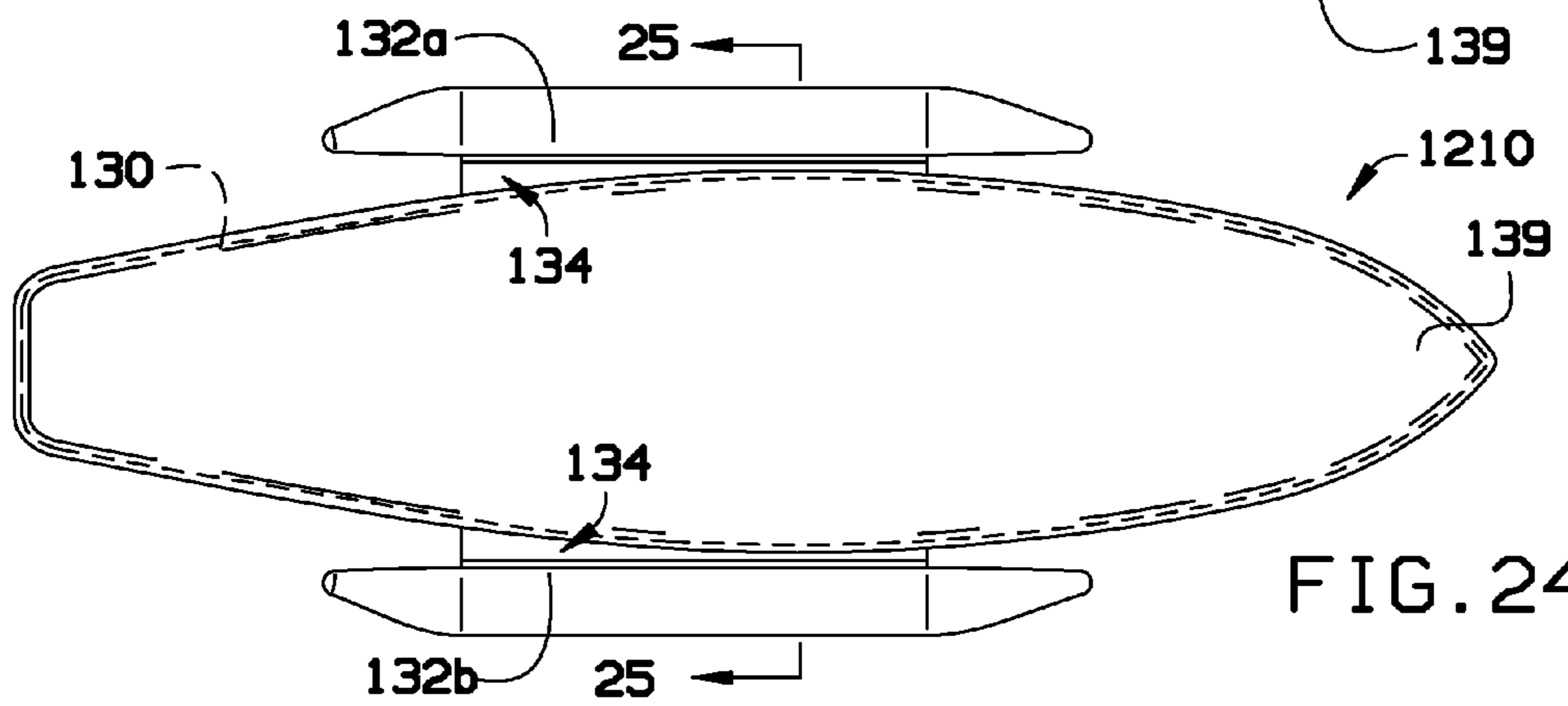


FIG. 24

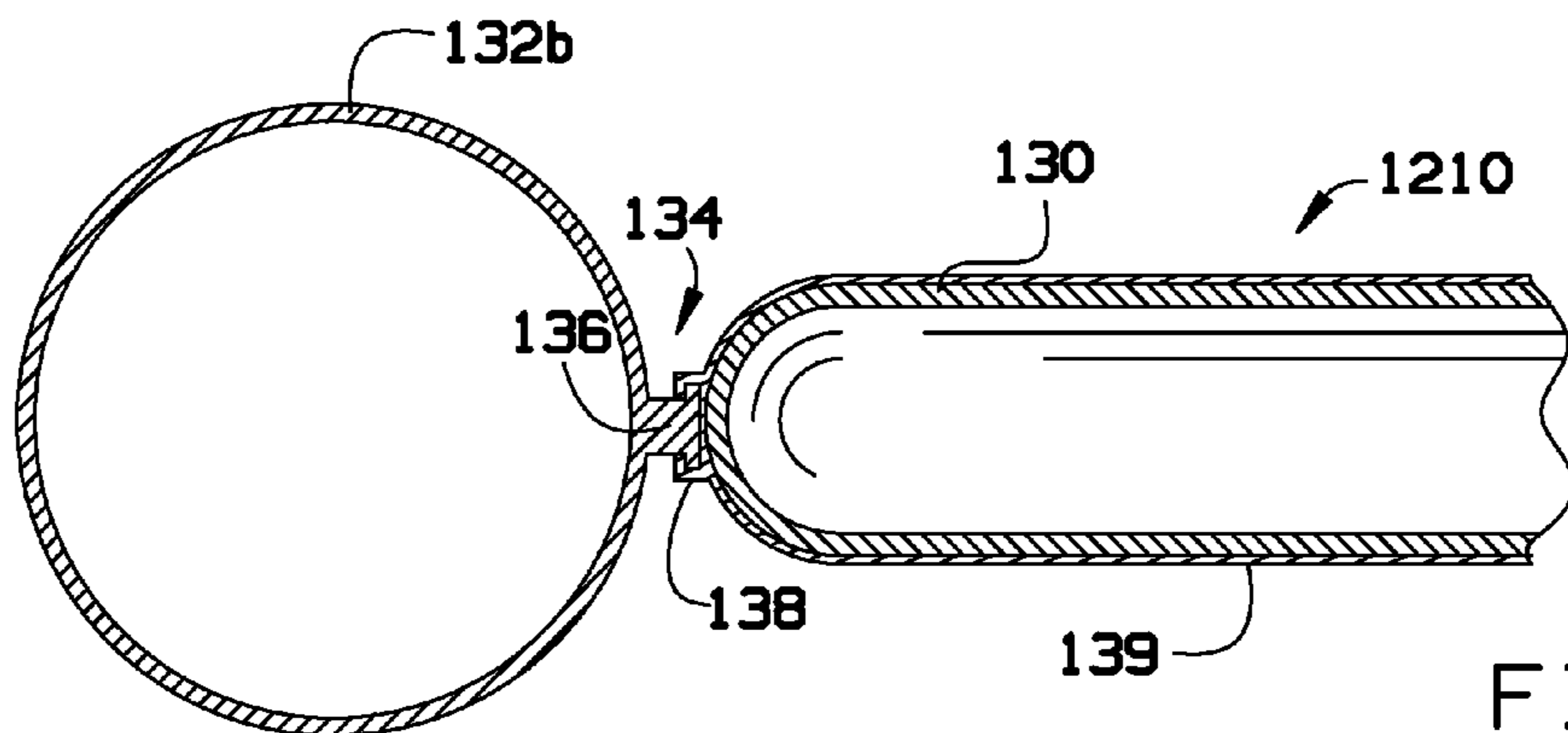


FIG. 25

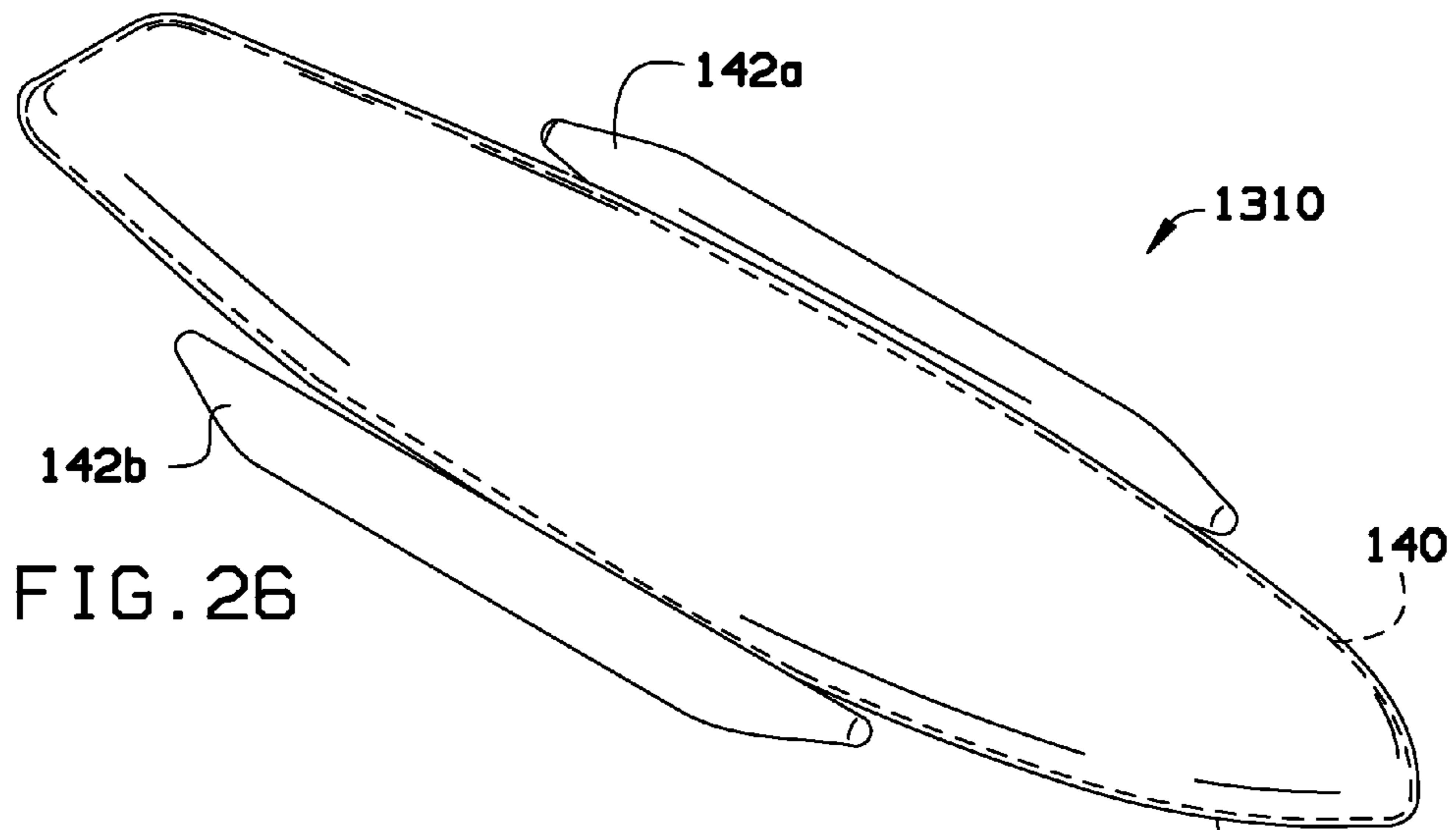


FIG. 26

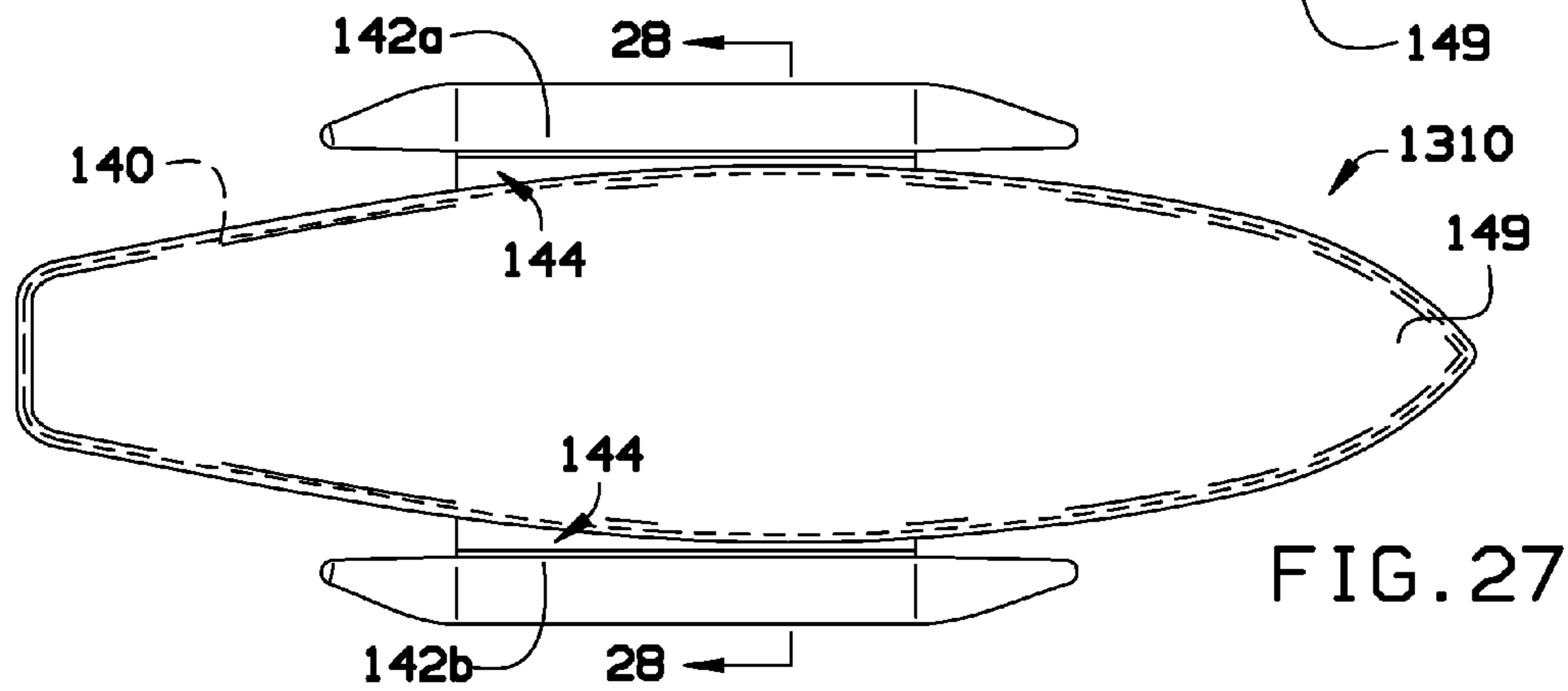


FIG. 27

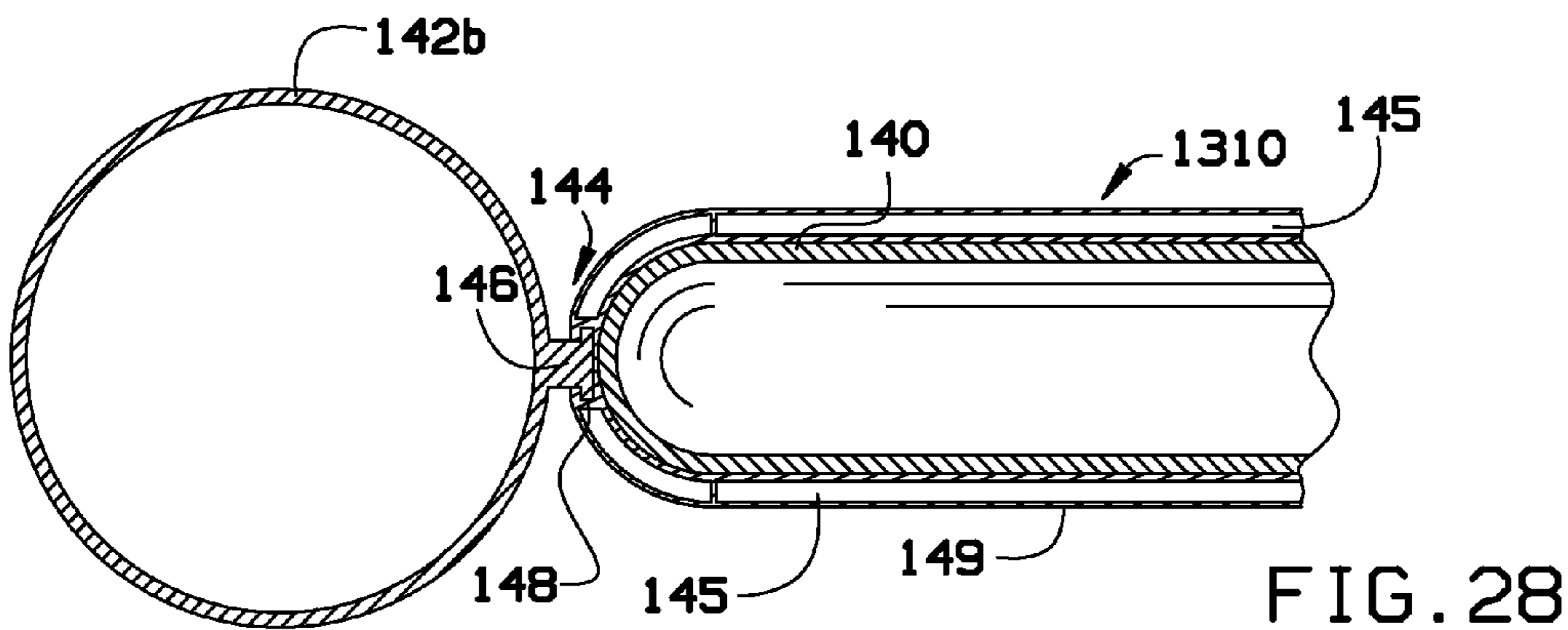


FIG. 28

SUPPORT SYSTEM FOR A PADDLE BOARD

RELATED APPLICATION

This application claims priority to provisional patent application U.S. Ser. No. 61/676,110 filed on Jul. 26, 2012, the entire contents of which is herein incorporated by reference.

BACKGROUND

The embodiments herein relate generally to sports equipment. More specifically, the embodiments herein relate to support systems for paddle boards.

Prior to embodiments of the disclosed invention there was no device that would allow a user to change the shape of a paddle board to increase buoyancy and stability. For instance in U.S. Patent Application Publication 2013/0023169 filed by Morelli, a paddle board is merged with the shape of a tri-hulled catamaran to increase efficiency when used for surfing. Morelli teaches placing additional hulls offset from the paddle board, whereas embodiments of the present invention utilize side floats that lift up and reduce the draft of the paddleboard. Morelli would not really work because the outrigger design would get in the way of a user's paddle.

SUMMARY

A support system is configured to increase buoyancy and stability of a paddle board having a central axis running from bow to stern. The support system includes a port side float connected to the paddle board such that the port side float is parallel to the central axis. A starboard side float is connected to the paddle board such that the starboard side float is parallel to the central axis. The port side float and the starboard side float increase lateral stability on the paddle while reducing draft on the paddle board making it safer to float in shallow water.

In some embodiments, the port side float comprises a port side central channel running with a curvature equal and opposite to a port side portion of the paddle board. The starboard side float comprises a starboard side central channel running with a curvature equal and opposite to a starboard side portion of the paddle board. The paddle board further comprises a first port cavity, a second port cavity, a first starboard cavity and a second starboard cavity. The port side float is mechanically coupled to a first port side pin and a second port side pin. The first port side pin can fit inside the first port cavity and the second port side pin can fit inside the second port cavity. The starboard side float is mechanically coupled to a first starboard side pin and a second starboard side pin. The first starboard side pin can fit inside the first starboard cavity and the second starboard side pin can fit inside the second starboard cavity.

In some embodiments, the paddle board further comprises a port track receiver and a starboard track receiver. The port side float is mechanically coupled to a port track which can fit inside the port track receiver creating a port track system wherein the port track is immediately adjacent to the paddle board while causing the port side float to be parallel to the central axis. The starboard side float is mechanically coupled to a starboard track which can fit inside the starboard track receiver creating a starboard track system wherein the starboard track is immediately adjacent to the paddle board while causing the starboard side float to be parallel to the central axis.

In some embodiments, the port side float comprises a port forward strap channel and a port aft strap channel. The star-

board side float comprises a starboard forward strap channel and a starboard aft strap channel. A forward strap threads through the port forward strap channel over and immediately adjacent to the paddle board through the starboard forward strap channel under and beneath the paddle board where the forward strap travels back to the port side float. An aft strap threads through the port aft strap channel over and immediately adjacent to the paddle board, through the starboard aft strap channel under and beneath the paddle board where it travels back to the port side float. The forward strap and the aft strap hold the port side float and the starboard side float immediately adjacent to the paddle board and parallel to the central axis.

In some embodiments, a top sock is mechanically coupled to the port side float and the starboard side float. A bottom sock is mechanically coupled to the port side float and the starboard side float. The top sock and the bottom sock hold the port side float and the starboard side float immediately adjacent to the paddle board and parallel to the central axis.

In some embodiments, port side D-rings and starboard side D-rings are mechanically coupled to the paddle board. Port side float straps are mechanically coupled to the port side float. In this manner, connecting the port side D-rings to the port side float straps render the port side float immediately adjacent to the paddle board and parallel to the central axis. Starboard side float straps are mechanically coupled to the starboard side float. In this manner, connecting the starboard side D-rings to the starboard side float straps renders the starboard side float immediately adjacent to the paddle board and parallel to the central axis.

In some embodiments, port side female buckle receivers and starboard female buckle receivers are mechanically coupled to the paddle board. Port side male buckles are mechanically coupled to the port side float; wherein connecting the port side female buckle receivers to the port side male buckles render the port side float immediately adjacent to the paddle board and parallel to the central axis. Starboard side male buckles are mechanically coupled to the starboard side float. Connecting the starboard side female buckle receivers to the starboard side male buckles renders the starboard side float immediately adjacent to the paddle board and parallel to the central axis.

In some embodiments, the paddle board is covered in a sock wherein the sock further comprises a port track receiver and a starboard track receiver. The port side float is mechanically coupled to a port track which can fit inside the port track receiver creating a port track system wherein the port track is immediately adjacent to the paddle board while causing the port side float to be parallel to the central axis. The starboard side float is mechanically coupled to a starboard track which can fit inside the starboard track receiver creating a starboard track system wherein the starboard track is immediately adjacent to the paddle board while causing the starboard side float to be parallel to the central axis. The sock is mechanically coupled in an air cavity to provide greater comfort for the paddle board while in use.

BRIEF DESCRIPTION OF THE FIGURES

The detailed description of some embodiments of the invention is made below with reference to the accompanying figures, wherein like numerals represent corresponding parts of the figures.

FIG. 1 is a perspective view of a clip-in embodiment.

FIG. 2 is a top view of a clip-in embodiment.

FIG. 3 is a section view of a clip-in embodiment along line 3-3 in FIG. 2.

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FIG. 4 is a perspective view of an embedded clip-in embodiment.

FIG. 5 is a top view of an embedded clip-in embodiment.

FIG. 6 is a section view of an embedded clip-in embodiment along line 6-6 in FIG. 5.

FIG. 7 is a perspective view of a track embodiment.

FIG. 8 is a top view of a track embodiment.

FIG. 9 is a section detail view of a track embodiment along line 9-9 in FIG. 8.

FIG. 10 is a perspective view of a strap embodiment.

FIG. 11 is a top view of a strap embodiment.

FIG. 12 is a section view of a strap embodiment along line 12-12 in FIG. 11.

FIG. 13 is a perspective view of a sock embodiment.

FIG. 14 is a top view of a sock embodiment.

FIG. 15 is a section view of a sock embodiment along line 15-15 in FIG. 14.

FIG. 16 is a perspective view of a D-ring embodiment.

FIG. 17 is a perspective detail view of a D-ring embodiment.

FIG. 18 is a perspective view of a buckle embodiment.

FIG. 19 is a perspective detail view of a buckle embodiment.

FIG. 20 is a perspective view of a sock-all-cover embodiment.

FIG. 21 is a top view of a sock-all-cover embodiment.

FIG. 22 is a section view of a sock-all-cover embodiment along line 22-22 in FIG. 21.

FIG. 23 is a perspective view of a sock and track embodiment.

FIG. 24 is a top view of a sock and track embodiment.

FIG. 25 is a section view of a sock and track embodiment along line 25-25 in FIG. 24.

FIG. 26 is a perspective view of a sock and track and air cavity embodiment.

FIG. 27 is a top view of a sock and track and air cavity embodiment.

FIG. 28 is a section view of a sock and track and air cavity embodiment along line 28-28 in FIG. 27.

DETAILED DESCRIPTION OF CERTAIN EMBODIMENTS

By way of example, and referring to FIG. 1, FIG. 2 and FIG. 3, paddle board 50 is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Clip-in embodiment 410 provides one solution to this problem. Here, paddle board 50 comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board 50 further comprises two port cavities and two starboard cavities.

Port side float 52A is mechanically coupled to first port pin 54 and second port side pin 54. First port side pin 54 can fit inside a first port cavity on paddle board 50. Likewise, second port side pin 54 can fit inside a second port cavity on paddle board 50. Fitting the port side pins into the port cavities causes port side float 52a to be immediately adjacent to paddle board 50 while being parallel to the central axis.

Similarly, starboard side float 52B is mechanically coupled to first starboard pin 54 and second starboard side pin 54. First starboard side pin 54 can fit inside a first starboard cavity on paddle board 50. Likewise, second starboard side pin 54 can fit inside a second starboard cavity on paddle board 50. Fitting the starboard side pins 54 into the starboard cavities causes starboard side float 52B to be immediately adjacent to paddle board 50 while being parallel to the central axis.

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Port side float 52A and starboard side float 52B cause additional buoyancy and stability to paddle board 50. This makes paddle board 50 easy to navigate.

Turning to FIG. 4, FIG. 5 and FIG. 6, paddle board 60 is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Embedded clip-in embodiment 510 provides one solution to this problem. Here, paddle board 60 comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board 60 further comprises two port cavities and two starboard cavities.

Port side float 62A comprises a port side central channel running from fore to aft with a curvature equal and opposite to a port side portion of paddle board 60. Port side float 62A is mechanically coupled to first port pin 64 and second port side pin 64. First port side pin 64 can fit inside a first port cavity on paddle board 60. Likewise, second port side pin 64 can fit inside a second port cavity on paddle board 60. Fitting the port side pins into the port cavities causes port side float 62A to be immediately adjacent to paddle board 60 while being parallel to the central axis and slightly covering a port portion of paddle board 60.

Similarly, starboard side float 62B comprises a starboard side central channel running from fore to aft with a curvature equal and opposite to a starboard side portion of paddle board 60. Starboard side float 62B is mechanically coupled to first starboard pin 64 and second starboard side pin 64. First starboard side pin 64 can fit inside a first starboard cavity on paddle board 60. Likewise, second starboard side pin 64 can fit inside a second starboard cavity on paddle board 60. Fitting the starboard side pins into the starboard cavities causes starboard side float 62B to be immediately adjacent to paddle board 60 while being parallel to the central axis and slightly covering a starboard portion of paddle board 60.

Port side float 62A and starboard side float 62B cause additional buoyancy and stability to paddle board 60. This makes paddle board 60 easy to navigate. The central channels running from fore to aft with a curvature equal and opposite to a side portion of paddle board 60 provide additional stability when compared to the unchanneled embodiment above.

Turning to FIG. 7, FIG. 8 and FIG. 9, paddle board 70 is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Track embodiment 610 provides one solution to this problem. Here, paddle board 70 comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board 70 further comprises a port track receiver 78 and a starboard track receiver 78.

Port side float 72A is mechanically coupled to port track 76. Port track 76 can fit inside port track receiver 78 creating port track 74. This causes port track 74 to be immediately adjacent to paddle board 70 while causing port side float 72A to be parallel to the central axis.

Similarly, starboard side float 72B is mechanically coupled to starboard track 76. Starboard track 76 can fit inside starboard track receiver 78 creating starboard track 74. This causes starboard track 74 to be immediately adjacent to paddle board 70 while causing starboard side float 72B to be parallel to the central axis.

Port side float 72A and starboard side float 72B cause additional buoyancy and stability to paddle board 70. This makes paddle board 70 easy to navigate. While tracks 74 allow more vertical and horizontal flexibility for side floats 72, they also allow water to flow along a greater surface area slightly reducing efficiency.

Turning to FIG. 10, FIG. 11 and FIG. 12, paddle board 80 is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Strap embodiment 710 pro-

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vides one solution to this problem. Here, paddle board **80** comprises a central axis from a point at the bow to a midpoint on the stern.

Port side float **82A** comprises a port forward strap channel and a port aft strap channel. Likewise, starboard side float **82B** comprises a starboard forward strap channel and a starboard aft strap channel. Forward strap **84** threads through the port forward strap channel over and immediately adjacent to paddle board **80**, through the starboard forward strap channel under and beneath paddle board **80** where it travels back to port side float **82A**. Likewise, aft strap **84** threads through the port aft strap channel over and immediately adjacent to paddle board **80**, through the starboard aft strap channel under and beneath paddle board **80** where it travels back to port side float **82A**.

This causes paddle board **80** to rest slightly above the center of port side float **82A** and starboard side float **82B** where port side float **82A** and starboard side float **82B** are parallel to the central axis. Strap embodiment **710** provides excellent buoyancy and stability paddle board **80**, while straps **84** create some turbulence beneath the water and increase drag.

Turning to FIG. **13**, FIG. **14** and FIG. **15**, paddle board **90** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Sock amidships cover embodiment **810** provides one solution to this problem. Here, paddle board **90** comprises a central axis from a point at the bow to a midpoint on the stern.

Port side float **92A** is mechanically coupled to top amidships sock **94**. Top amidships sock **94** is further mechanically coupled to starboard side float **92B**. Likewise, port side float **92** is mechanically coupled to bottom amidships sock **94**. Bottom amidships sock **94** is further mechanically coupled to starboard side float **92B**.

A user can install sock amidships cover embodiment **810** onto paddle board **90** by simply sliding sock amidships cover embodiment **810** over paddle board **90**. Sock amidships cover embodiment **810** should fit snugly over paddle board **90** to keep drag minimal while providing increased buoyancy and stability for paddle board **90**.

Turning to FIG. **16** and FIG. **17**, paddle board **100** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. D-ring embodiment **910** provides one solution to this problem. Here, paddle board **100** comprises a central axis from a point at the bow to a midpoint on the stern.

Paddle board **100** is mechanically coupled to forward port D-ring **106** with forward port paddle board strap **108**. Paddle board **100** is further mechanically coupled to aft port D-ring **106** with aft port paddle board strap **108**. Port side float **102A** is mechanically coupled to forward port side float strap **109** and aft port side float strap **109**. A user can attach port side float **102A** to paddle board **100** by connecting the D-rings **106** with their respective float straps **109** thereby utilizing d-ring securement system **104**.

Likewise, paddle board **100** is mechanically coupled to forward starboard D-ring **106** with forward starboard paddle board strap **108**. Paddle board **100** is further mechanically coupled to aft starboard D-ring **106** with aft starboard paddle board strap **108**. Starboard side float **102A** is mechanically coupled to forward starboard side float strap **109** and aft starboard side float strap **109**. A user can attach starboard side float **102A** to paddle board **100** by connecting the D-rings **106** with their respective float straps **109** thereby utilizing d-ring securement system **104**. Utilizing d-ring securement system **104** holds port side float **102A** and starboard side float **102A** where both are parallel to the central axis.

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Turning to FIG. **18** and FIG. **19**, paddle board **110** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Buckle embodiment **1010** provides one solution to this problem. Here, paddle board **110** comprises a central axis from a point at the bow to a midpoint on the stern.

Paddle board **110** is mechanically coupled to forward port female buckle receiver **117** with forward port paddle board buckle strap **118**. Paddle board **100** is further mechanically coupled to aft port female buckle receiver **117** with aft port paddle board buckle strap **118**. Port side float **112A** is mechanically coupled to male buckle **116** with and aft port side float buckle strap **119**. A user can attach port side float **112A** to paddle board **110** by connecting male buckles **116** with their respective female buckle receivers **117** thereby utilizing buckle securement system **114**.

Likewise, paddle board **110** is mechanically coupled to forward starboard female buckle receiver **117** with forward starboard paddle board buckle strap **118**. Paddle board **100** is further mechanically coupled to aft starboard female buckle receiver **117** with aft starboard paddle board buckle strap **118**. Starboard side float **112A** is mechanically coupled to male buckle **116** with and aft starboard side float buckle strap **119**. A user can attach starboard side float **112A** to paddle board **110** by connecting male buckles **116** with their respective female buckle receivers **117** thereby utilizing buckle securement system **114**. Utilizing buckle securement system **114** holds port side float **112A** and starboard side float **112A** where both are parallel to the central axis.

Turning to FIG. **20**, FIG. **21** and FIG. **22**, paddle board **120** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Full length sock cover embodiment **1110** provides one solution to this problem. Here, paddle board **120** comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board **130** is completely covered with full length sock **139**.

Port side float **122A** is mechanically coupled to top sock **124**. Top sock **124** is further mechanically coupled to starboard side float **122B**. Likewise, port side float **122A** is mechanically coupled to bottom sock **124**. Bottom amidships sock **124** is further mechanically coupled to starboard side float **122B**. To contrast with sock amidships cover embodiment **810**, full length sock cover embodiment **1110** covers the entire length of paddle board **120**.

A user can install full length sock cover **1110** onto paddle board **120** by simply sliding full length sock cover **1110** over paddle board **120**. Full length sock cover **1110** should fit snugly over paddle board **120** to keep drag minimal while providing increased buoyancy and stability for paddle board **120**.

Turning to FIG. **23**, FIG. **24** and FIG. **25**, paddle board **130** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Full length sock cover and track embodiment **1210** provides one solution to this problem. Here, paddle board **130** comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board **130** is covered with sock **139**. Sock **139** further comprises a port track receiver **138** and a starboard track receiver **138**.

Port side float **132A** is mechanically coupled to port track **136**. Port track **136** can fit inside port track receiver **138** creating port track **134**. This causes port track **134** to be immediately adjacent to paddle board **130** while causing port side float **132A** to be parallel to the central axis.

Similarly, starboard side float **132B** is mechanically coupled to starboard track **136**. Starboard track **136** can fit inside starboard track receiver **138** creating starboard track **134**. This causes starboard track **134** to be immediately adja-

cent to paddle board **130** while causing starboard side float **132B** to be parallel to the central axis.

Port side float **132A** and starboard side float **132B** cause additional buoyancy and stability to paddle board **130**. This makes paddle board **130** easy to navigate. While tracks **134** allow more vertical and horizontal flexibility for side floats **132**, they also allow water to flow along a greater surface area slightly reducing efficiency.

Turning to FIG. **26**, FIG. **27** and FIG. **28**, paddle board **140** is readily navigable for an experienced user, but it can be difficult to navigate for a novice. Full length sock cover, track and air cavity embodiment **1310** provides one solution to this problem. Here, paddle board **140** comprises a central axis from a point at the bow to a midpoint on the stern. Paddle board **140** is covered with sock **149**. Sock **149** is further mechanically coupled to air cavity **145**. Air cavity **145** is immediately adjacent to paddle board **140**. Sock **149** further comprises a port track receiver **148** and a starboard track receiver **148**.

Port side float **142A** is mechanically coupled to port track **146**. Port track **146** can fit inside port track receiver **148** creating port track **144**. This causes port track **144** to be immediately adjacent to paddle board **140** while causing port side float **142A** to be parallel to the central axis.

Similarly, starboard side float **142B** is mechanically coupled to starboard track **146**. Starboard track **146** can fit inside starboard track receiver **148** creating starboard track **144**. This causes starboard track **144** to be immediately adjacent to paddle board **140** while causing starboard side float **142B** to be parallel to the central axis.

Port side float **142A** and starboard side float **142B** cause additional buoyancy and stability to paddle board **140**. Additionally air cavity **145** can add comfort for a user who would prefer not to stand upon paddle board **140** without a covering. This makes paddle board **140** easy to navigate. While tracks **144** allow more vertical and horizontal flexibility for side floats **142**, they also allow water to flow along a greater surface area slightly reducing efficiency.

The port side floats and starboard side floats described above can be made of many known materials in known ways. By way of example, foam, inflatable cavities, plastic, epoxy or carbon fiber would be buoyant and could work.

Persons of ordinary skill in the art may appreciate that numerous design configurations may be possible to enjoy the functional benefits of the inventive systems. Thus, given the wide variety of configurations and arrangements of embodi-

ments of the present invention the scope of the invention is reflected by the breadth of the claims below rather than narrowed by the embodiments described above.

What is claimed is:

1. A support system configured to increase buoyancy and stability of a paddle board having a central axis running from bow to stern, the support system comprising:

a port side float connected to the paddle board midway between the bow and the stern wherein the port side float is parallel to the central axis;

a starboard side float connected to the paddle board midway between the bow and the stern wherein the starboard side float is parallel to the central axis;

wherein the port side float and the starboard side float increase lateral stability on the paddle board while reducing draft on the paddle board making it safer to float in shallow water;

the paddle board further comprises a first port cavity, a second port cavity, a first starboard cavity and a second starboard cavity;

wherein each of the cavities is formed by a slot arranged transverse to the central axis, each slot progressively narrows as the slot extends from an outer periphery of the paddle board inward toward the central axis;

the port side float is mechanically coupled to a first port side cylindrical pin and a second port side cylindrical pin;

wherein the first port side cylindrical pin is adapted to fit inside the first port cavity;

wherein the second port side cylindrical pin is adapted to fit inside the second port cavity;

the starboard side float is mechanically coupled to a first starboard side pin and a second starboard side pin;

wherein the first starboard side cylindrical pin is adapted to fit inside the first starboard cavity; and

wherein the second starboard side cylindrical pin is adapted to fit inside the second starboard cavity.

2. The support system of claim **1**,

the port side float comprises a port side central channel running with a curvature equal and opposite to a port side portion of the paddle board;

the starboard side float comprises a starboard side central channel running with a curvature equal and opposite to a starboard side portion of the paddle board.

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